MULTILATERAL WORKING GROUP ON WATER RESOURCES

MIDDLE EAST PEACE PROCESS

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Introduction

The Middle East peace process and its bilateral track began with the Madrid Conference of October 1991. Subsequently, peace process partners agreed to establish a multilateral track, which began with an organizational meeting in Moscow in January 1992. The broad goal of the multilateral track is to focus on issues of common interest and importance throughout the region that can best be addressed on a regional basis. The multilateral track consists of five working groups: (1) Working Group on Water Resources, (2) Working Group on the Environment, (3) Working Group on Regional Economic Development, (4) Working Group on Refugees, and (5) Working Group on Arms Control and Regional Security.

For the Middle East, most of which has semi-arid to arid climatic conditions, the water problems are myriad. The Working Group on Water Resources (WGWR), for which the United States serves as Gavelholder and Japan and the European Union serve as co-organizers, established the following four broad agenda items to address some of the critical water issues.

- Enhancement of water data availability.
- Water management practices, including conservation.
- Enhancement of water supply.
- Concepts of regional water management and cooperation.

Since its inception, the WGWR has been implementing a variety of projects under its four agenda items. Each project enjoys the support, both technical and financial, of one or more of the WGWR's extra-regional donor delegations. The multilateral framework has been a successful mechanism for addressing regional problems. The WGWR in particular has been successful in developing a cadre of high-level water decision-makers that now can effectively work together on regional water issues. The WGWR projects continue to provide important benefits to its participating regional parties. Selected project activities are described in this brochure.

Enhancement of Water Data Availability

Regional Water Data Banks Project

The Implementation Plan of the Regional Water Data Banks Project was approved in November 1994. Regional participants met with representatives from the United States, European Union, Canada, and France (Donor Parties) in January 1995 to initiate the project. The first action was to form a committee to manage, coordinate, and promote project implementation. The committee formed during the meeting is known as the **Ex**ecutive **Ac**tion **T**eam (EXACT) and is composed of two members from each regional party and two representatives from each Donor Party.

The spring at Jericho has served as a source of freshwater for thousands of years.

Gaging station on the Upper Jordan River.

EXACT has since met twice every year to plan, coordinate, and direct project implementation. The Regional Water Data Banks Project is organized to improve the availability and applicability of water data information. The project is implementing 39 recommendations applicable to all of the regional participants, plus Work Package A, which is designed to help establish a Palestinian water data bank. These activities and Work Package A will upgrade existing data banks while creating one for the Palestinians in order to assure that all of the systems can function effectively in a regional setting. The project goal is to enable the exchange of consistent, compatible, and reliable water data and information to support decision making at both local and regional scales. The basic approach adopted for the project is that water data collection and dissemination programs are compatible and will meet the specific needs of the regional participants. Through this process and approach, regional sharing and exchange of relevant water information will be promoted and enhanced.

As a result of continuous collaborative work since January 1995, the Regional Water Data Banks Project has achieved some remarkable successes, a few of which are listed below.

- Water data collection, storage, and retrieval capabilities have been established within the Palestinian Water Authority and those of the Israeli Hydrological Service and the Jordanian Ministry of Water and Irrigation were improved and enhanced.
- Mobile labs, computer equipment, and advanced software all were donated to the regional participants within a coordinated, compatible framework.
- Manuals, standards, and a variety of training programs have been implemented.
- Relevant, interconnected projects have been developed and are being implemented jointly, and discussions are underway for future collaborative work.
- Theoretical and practical frameworks for future participation have been laid.

The regional participants continue to dedicate both human and financial resources to establish compatible water data collection and dissemination programs and to adhere to agreed-upon regional standards for equipment, accuracy, and operations. New activities that are expected to commence in the year 2000 include:

- Real-time transmission of hydrologic data.
- Joint training of technicians.
- Enhancements to networks and laboratories.
- Pilot projects looking at artificial recharge of groundwater and waste water treatment for small communities.
- Regional analysis of rainfall intensity.

The Water Data Banks Project has a web site located at: http://www.wwg-exact.org

Water from the Dead Sea is pumped into large evaporation ponds constructed in the shallow southern basin for the extraction of various salts for commercial use.

Irrigation system supplied by wells.

Water Management Practices, Including Conservation

Public Awareness and Water Conservation Project

The Multilateral Working Group on Water Resources established the Public Awareness and Water Conservation Project in 1996, which is being managed by the United States. The first activity completed by the regional participants was the design and preparation of a video aimed at youth that highlights the importance of water issues from a regional perspective. This video is available for showing at youth-oriented events throughout the region.

The second major activity underway, known as WaterCare, is the preparation of a Student Resource Book, Teacher's Guide, and complimentary Web Page focused on water conservation issues that are regional in concept, scope, and content. The materials are being prepared jointly by educational writers from each of the regional participants and are being written for students between 12 and 15 years old. Once completed, they will be used as supplementary materials in the educational systems of each of the regional participants. The major topics addressed by the materials include water resources, water use, water pollution and life/health, water management for conservation, and water care for the future, all from a regional perspective. The materials are scheduled for implementation in schools throughout the region in January 2001.

Optimization of Intensive Agriculture Under Varying Water Quality Conditions

In 1996, the Multilateral Working Group on Water Resources established a project on Optimization of Intensive Agriculture Under Varying Water Quality Conditions, which is being managed by the Government of Luxembourg. The primary focus of the project is to demonstrate how brackish and saline water can be used to support sustainable farming. A demonstration farm, established in Gaza at Beit Hanoun, is used to support technology transfer in the field of water use. Project implementation is led by Al-Azhar University of Gaza.

Comparative Study of Water Laws and Water Institutions in the Region

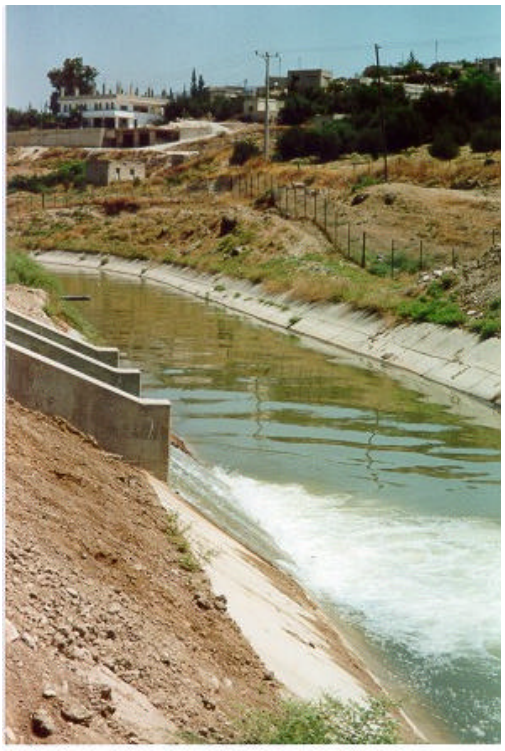
The Norwegian Government, through the Center for Environmental Studies and Resource Management, a non-governmental organization known as CESAR, conducted a comparative study outlining the legislative, regulatory, institutional, and pricing framework of water resource management in various Middle Eastern countries and territories. The data allows common denominators among the various water management systems to be identified. A detailed comparison among the various water regimes establishes a potential starting point for consensual formal cooperation in the future. A compilation of official English translations of the various water laws and authority by-laws has been produced.

Shepard tending a flock of sheep.

Enhancement of Water Supply

Regional Water Supply and Demand Study

The German Government undertook a study of the long-term strategic development of water resources in the region. The objectives of the study were to (1) elaborate specific proposals for the provision of additional water resources on the basis of a comprehensive demand forecast and (2) develop a concept for coordinated future management of all regional water resources. The study has been implemented in three phases. Phase I is a review of local and regional water-related data, establishing water balances, determining the size of the long-term net water gap between supply and demand, and identifying options for bridging this gap. Phase II is an assessment of local development options and regional options for developing additional water resources, using short-term (2000), medium-term (2010), and long-term (2040) scenarios. Phase III is the joint elaboration of a regional water resources strategy and the provision of recommendations on key short-term regional activities. The study was completed in 1998.



King Abdullah Canal at outflow of the "peace pipeline" bringing water from Lake Tiberias.

Roman-era cistern.

The data show a significant gap between water supply and demand throughout the region, even when using conservative estimates of future population growth and water use. In addition, deteriorating water quality already is a serious issue in some parts of the region and increasing pollution and salinization threaten to make more and more regional water resources non-utilizable in the future.

The conclusions and recommendations drawn from this study consider potential alternative water sources such as reuse of waste waters, sea water desalination at coastal locations, intersea schemes conveying water to the Dead Sea, importing water by pipeline, and importing water by large, refurbished crude oil tankers or new tankers, or the towing of large vinyl bags. They present a regional strategy, include immediate steps related to each of the regional participants, and offer short- to long-term priorities in a regional context. The five activities considered to be the highest priority are:

- Joint development of prototype desalination plant(s) at the Mediterranean and/or the Red Sea.
- Prefeasibility study of large-scale coastal desalination plants.
- Comparative study of intersea schemes (Med-Dead; Red-Dead).
- Prefeasibility study of intra-regional conveyance systems.
- Study on regional institutional set-ups.

Middle East Desalination Research Center

The Middle East Desalination Research Center (MEDRC) was established in Muscat, Sultanate of Oman in December 1996. Initial funding for the Center was obtained through contributions from several donor nations. The economy of the Middle East is inextricably tied to the high cost of seawater and brackish water desalination, a cost the Center will try to reduce.

The mission of MEDRC is to conduct, facilitate, promote, coordinate, and support basic and applied research in water desalination and supporting fields, and to raise the standard of living in the Middle East and elsewhere by cost reduction and quality improvement in the technical processes of water desalination.

The objectives of MEDRC are:

- Discovering, developing, and improving methods of desalination through basic and applied research.
- Initiating training programs in the field of desalination to develop expertise as well as technical and scientific skills.
- Promoting electronic networking communications to improve the dissemination of technical information on desalination.
- Establishing regional cooperation and work to foster progress in the development, improvement and use of water desalination and related technical areas.

Power generation at a solar farm.

Touring a research project at MEDRC.

The Center is directed to focus on priority research, training, and communication needs. Their research program is based on seven primary goals:

- Decrease the cost of desalination.
- Develop productive partnerships and co-operation.
- Develop sustainable desalination technologies.
- Improve communications in the desalination community.
- Develop human resources for application of desalination and foster international co-operation in research activities, particularly among regional experts.
- Utilize limited regional and international research resources.
- Maximize technology transfer of research activities.

The types of research projects sponsored by MEDRC include: Examinations of best practice for the disposal of brine from thermal and RO plants; Vari-RO solar powered desalting study; Novel material selection to improve corrosion resistance: automation and operation optimization to reduce water costs; Hybrid desalination systems; Innovative small desalination systems, hybrid fossil/solar heated multi-effect-still; Development of new technologies for the reduction of fouling; Investigation on the use of evaporation ponds for brine disposal in inland desalination plants; and Assessment of aquifer storage and recovery using desalinated water.

Sunset on Lake Tiberias.

Concepts of Regional Water Management and Cooperation

Declaration on Principles for Cooperation Among the Core Parties on Water-Related Matters and New and Additional Water Resources

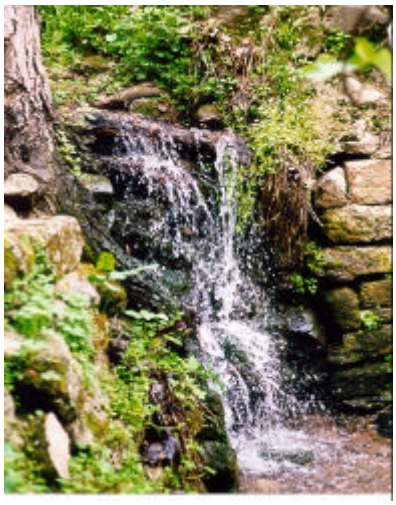
Subsequent to the Norwegian Government's study of water laws and regulations, the Israeli, Jordanian, and Palestinian (Core Party) participants adopted a formal "Declaration of Principles for Cooperation on Water-related Matters and New and Additional Water Resources (DP). In initialing the DP, the Core Parties jointly resolved to cooperate in the development of new and additional water resources. They recognized the importance of (1) developing locally compatible legal, economic, and institutional frameworks and (2) the ability of the participants to cooperate on the basis of identified common denominators among their respective water management systems. In addition to documenting the common denominators among the systems, the DP details avenues for potential cooperation in developing new water sources and in other water-related matters, should the Core Parties agree to move the process forward.

Waternet Project

The Multilateral Working Group on Water Resources established in 1996 the Waternet Project sponsored by the Norwegian Government. The project is the first joint initiative by the participating (Israeli, Jordanian, and Palestinian or "Core") parties to implement parts of the DP. The project has three main parts. Waternet-Local assists the Core Parties to develop a computerized water information system to display relevant local water information. Waternet-Regional assists the participating parties to link local nodes to form a shared regional computer information network. The third part is establishment of a Regional Waternet and Research Center in Amman, Jordan. The objectives of the Center, to begin operation in 2000, are to develop and maintain the Waternet, to stimulate regional cooperation on water related matters, to initiate new regional and joint activities, and to promote cooperation among the Core Parties as outlined in the DP.

The Waternet Steering Group, consisting of regional representatives, Norwegian project implementers, and technical experts as needed, meets regularly to lead, monitor, and evaluate the project. A Local Steering Group and a Local Technical Group provide further assistance and support.

One of the first objectives to be achieved is the development of a common information system for water-related matters, known as the Waternet Information System (WIS). The initial focus for WIS is on the development of the module called "Water Library and Information Navigator". Compatible computer node sites are being installed and water-related regional bibliographic information is being entered into a data base.



Small flowing spring.

Water Sector Training Program

The importance of the water issues in the region led the Working Group on Water Resources to accept in April 1994 a joint United States/European Union proposal for a Regional Training Program in the water sector. The European Union undertook the coordination of this Program, which included donors from the United States, European Union, Canada, Japan, The Netherlands, France, Israel, Spain, UNEP, and Sweden.

The program consisted of 14 courses; although some were offered twice so 20 sessions were presented. The topics covered included water-related aspects of planning, management, administration, technical, legal, financial, and institutional subjects. Courses were designed to consider issues from a regional perspective, so as to initialize and promote the creation of a regional information network and to encourage widespread reflection on common issues. A total of 275 people participated in the program, including: Palestinians (91), Jordanians (70), Egyptians (47), Israelis (38), Omanis (14), Yemenis (8), Tunisians (4) Moroccans (2), and Saudi Arabians (1). Participants ranged from scientists, planners, and managers, to policy-level decision makers.

Future Activities and Needs

The success of the Multilateral framework in dealing with the problems of water scarcity and regional cooperation serves as a beacon to the rest of the world as to what can be accomplished. Having proven the efficacy of the framework, we face the future with a new sense of hope.

The time has come to extend and enhance the project portfolio to include other avenues designed to foster sustainable development. Some options that are possible include: investing in the treatment of wastewater, rehabilitation of municipal water supply systems, desalination plants, water transport by sea, improving the quality of water and its conservation, working to prevent pollution, and

Joint training on field measurements of dissolved oxygen.

implementing public awareness and public health campaigns.

In the dawn of the new Millennium, all nations are invited to take part in this mutual quest. Our experience shows that international support, as demonstrated in the Working Group on Water Resources, leads to vitality and commitment to the process. This enables the vision to become a reality, by initiating and realizing both local and regional water projects. The time has come to bring into the process other regional parties and donors from both within the Middle East and North Africa region and without, and from both the public and private sectors. Together, we will discover new synergies and new ways to resolve shared problems. Together, we can usher in an era of peace, prosperity, and global collaboration.

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